

## CLAIMS

- 1 1. A system for transmitting encoded video signals, comprising:
  - 2 a system for partitioning encoded video data into a plurality of streams,
  - 3 a system for determining a priority for each of a plurality of streams of encoded
  - 4 video data; and
  - 5 a system for assigning a variable modulation rate to each stream of encoded video
  - 6 data based on the determined priority.
- 1 2. The system of claim 1, wherein streams determined as having a relatively high priority
  - 2 are assigned a lower modulation rate than streams determined as having a relatively low
  - 3 priority.
- 1 3. The system of claim 1, wherein streams determined as having a relatively low priority
  - 2 are assigned a higher modulation rate than streams determined as having a relatively high
  - 3 priority.
- 1 4. The system of claim 1, further comprising a system that ensures that an average
  - 2 modulation rate substantially conforms to a predetermined target rate for the plurality of
  - 3 streams.

1 5. The system of claim 1, wherein the system for partitioning partitions the encoded  
2 video data based on a criteria selected from the group consisting of: distinctions between  
3 frame type, distinctions between header and non-header data, distinctions between base  
4 layer and enhancement layer streams present in a scalable coded video, and distinctions  
5 in video packets containing data corresponding to at least one macroblocks.

1 6. The system of claim 1, wherein the priority of each stream is determined based on an  
2 MPEG frame type, and wherein streams containing I frames are determined to have a  
3 relatively higher priority than streams containing P frames, and streams containing P  
4 frames are determined to have a relatively higher priority than streams containing B  
5 frames.

1 7. The system of claim 1, wherein the priority of a stream containing at least one  
2 macroblock is determined based on motion and texture information contained in the  
3 macroblock.

1 8. The system of claim 1, wherein the system for determining priority assigns a relatively  
2 higher priority to MPEG header data than it assigns to non-header MPEG data.

1 9. The system of claim 1, wherein the priority of a stream is based on base and  
2 enhancement layers, and wherein a relatively higher priority is assigned to base layers  
3 than is assigned to enhancement layers.

1 10. An encoder for encoding and transmitting video data, comprising:  
2 a system for selecting a coding bit rate of the encoder;  
3 a system for partitioning encoded video data into a plurality of streams;  
4 a system for determining a priority for each of the plurality of streams of encoded  
5 video data; and  
6 a system for assigning one of a plurality of possible modulation rates to each  
7 stream of encoded video data based on the determined priority.

1 11. The encoder of claim 10, wherein the plurality of possible modulation rates includes  
2 a low modulation rate below the coding bit rate and a high modulation rate above the  
3 coding bit rate.

1 12. The encoder of claim 11, wherein streams determined as having a relatively high  
2 priority are assigned the low modulation rate.

1 13. The encoder of claim 11, wherein streams determined as having a relatively low  
2 priority are assigned the high modulation rate.

1 14. The encoder of claim 11, further comprising a system that ensures that an average  
2 modulation rate is maintained at the coding bit rate for the plurality of streams.

1 15. A program product stored on a recordable medium, which when executed, includes a

2 system for transmitting encoded video data, the program product comprising:

3 means for determining a priority for each of a plurality of streams of encoded  
4 video data; and

5 means for selecting a modulation rate from a set of modulation rates for each  
6 stream of encoded video data based on the determined priority.

1 16. The program product of claim 15, further comprising encoding means that

2 determines a coding bit rate of the plurality of streams, wherein the coding bit rate is

3 selected between an upper and lower bound of the set of modulation rates.

1 17. The program product of claim 16, further comprising means for ensuring that an

2 average modulation rate is maintained at the coding bit rate for the plurality of streams.

1 18. The program product of claim 15, wherein the assigning means assigns a higher

2 modulation rate to lower priority streams and assigns a lower modulation rate to higher

3 priority streams.

1 19. A method of encoding and transmitting video data, comprising the steps of:  
2 selecting a coding bit rate between an upper and lower bound of an available set  
3 of modulation rates;  
4 encoding the video data at the selected coding bit rate;  
5 determining a priority for each of a plurality of streams of encoded video data;  
6 and  
7 assigning one of a plurality of possible modulation rates to each stream of  
8 encoded video data based on the determined priority.

1 20. The method of claim 19, comprising the further step of:  
2 ensuring that an average transmission rate each of the plurality of streams  
3 substantially conforms with the selected coding bit rate.

- 1 21. A decoder for decoding encoded video data made up of different streams, wherein
- 2 the different streams were transmitted using different modulation schemes determined
- 3 based on a priority of each stream, and wherein the decoder includes a system for
- 4 detecting and decoding the different modulation schemes.